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to the 1996 Act. Moreover, the ILEC should be required to provision the near remote terminal within 90 days.

C. Disclosure of Remote Terminal Information Should be Required

The same pre-application information as to space availability is needed for remote terminals as for central offices. CLECs, particularly those providing advanced services, need to know if there is collocation space available at the remote terminal.

When a CLEC makes a request of an ILEC for collocation space at a remote terminal, the ILEC should, within 10 calendar days, provide it with schematic drawings of the remote terminal itself and of all adjacent space, as well as information concerning: (1) the amount of collocation space available, and dimensions of any discrete blocks of space; (2) separate identification, through color coding or similar scheme, of the space already occupied by the ILEC, by type of equipment; (3) the number of other collocators and space they occupy; (4) any modifications or augments to the space since the last report; and (5) plans on the part of the incumbent to make any additional space available.

D. ILECs Should be Required to Deploy Remote Terminals That Support Interconnection by CLECs.

As mentioned above, the remote terminal is becoming the new central office. ILECs must not be permitted to artificially constrain interconnection at remote terminals by using equipment that unnecessarily restrains CLEC ability to effect interconnection there. Mpower acknowledges that any restriction on the ability of an ILEC to select the equipment that best serves its needs is an inconvenience. However, at the same time, some uniformity is necessary to achieve the timely provision of competitive advanced services offerings under the Act. Thus, the

ILEC should be required to ensure that the equipment they deploy to interface with CLEC equipment is outfitted with universal interfaces and protocols to enable efficient interconnection on just and reasonable and nondiscriminatory terms and conditions.

V. LOCAL COMPETITION RULES SHOULD BE UPDATED IN LIGHT OF NEXT GENERATION NETWORK ARCHITECTURES

A. "Project Pronto" and Richardson, Texas Implementations Demonstrate the Need for New Local Competition Rules to Govern ILEC Deployment of Next Generation Network Architectures

In the *Collocation Reconsideration Order and NPRM*, the Commission seeks comment on whether the deployment of new architecture and electronics by ILECs requires the Commission to revisit its local competition rules, particularly its rules on unbundling. In light of ILECs' deployment of so-called next generation network technologies, the Commission's inquiry could not come at a more crucial time. Indeed, it would be hard to imagine ILEC network deployments that would more dramatically show the need for revised Commission rules that will assure that CLECs are able to compete in the local telecommunications market. SBC in Project Pronto has proposed network deployments that would permit that incumbent carrier to determine the pace and scope of competition in the provision of advanced services. In Richardson, Texas, SBC has virtually foreclosed DSL competition by unilaterally removing copper loops.⁶⁸

Mpower is very concerned that "ILECs will extend their monopoly power over local telephony to advanced services by operating and controlling next-generation networks in a manner that ensures that only the ILECs (and their data affiliates) will be able to recognize the

⁶⁸ CC Docket No. 98-141, Letter from Mpower Communications Corp., to Carol Matthey, Deputy Chief, Common Carrier Bureau at p. 2-4 (August 15, 2000) ("*Mpower Richardson Texas* (con't.)")

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full benefits of new network technology and architecture.”⁶⁹ The Commission may want to take guidance from its recent decision finding that COMSAT must provide greater direct access to INTELSAT space segment services because users and service providers do not have “sufficient opportunity” “to meet their service or capacity requirements.”⁷⁰ This decision broadly stands for the proposition that the Commission may, and should, require access to bottleneck facilities and services controlled by a carrier – as COMSAT effectively controls the availability of INTELSAT services to U.S. based carriers – in order to promote the development of a competitive telecommunications market. In the present context, to ensure that the full benefits of this new architecture and technology extend to customers of CLECs and ILECs alike, the Commission should (1) revisit its local competition rules to assure that advanced services electronics and capabilities are included in the definition of UNEs, (2) establish new UNEs, and (3) require complete disclosure of ILEC network capabilities.

Letter”).

⁶⁹ *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Application for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transferor to SBC Communications, Inc., Transferee; Common Carrier Bureau and Office of Technology Announce Public Forum on Competitive Access to Next-Generation Remote Terminals*, CC Docket Nos. 98-147, 96-98, 98-141, and NSD-L-00-48, Reply Comments of AT&T Corp. at p. 12 (July 10, 2000) (“AT&T ALTS Petition Reply Comments”).

⁷⁰ *In the Matter of Availability of INTELSAT Space Segment Capacity to Users and Service Providers Seeking to Access INTELSAT Directly*, Report and Order, IB Docket No. 00-91, FCC 00-340, released September 19, 2000.

B. The Commission Should Redefine Loop and Transport Fiber UNEs to Include Advanced Services Electronics

A network element is defined under the Act as a “facility or equipment used in the provision of a telecommunication service” which includes the “features, functions, and capabilities that are provided by means of such facility.”⁷¹ The loop was initially defined by the Commission as “a transmission facility between a distribution frame, or its equivalent, in an ILEC central office, and the network interface device at the customer premises.”⁷² In its *UNE Remand Order*, the Commission modified its definition of the loop network element to include “all features, functions and capabilities of the transmission facilities, including dark fiber and attached electronics (except those used for the provision of advanced services, such as DSLAMs) owned by the ILEC, between an ILEC’s central office and the loop demarcation at the customer premises.”⁷³ The Commission has sought to ensure that its definition of the loop will apply to “new as well as current technologies.”⁷⁴

SBC’s request for waiver of the SBC/Ameritech merger conditions to authorize the SBC/Ameritech ILEC to own combination POTS/ADSL line cards located in remote terminals, as well as optical concentration devices (“OCDs”) located in central offices demonstrates the

⁷¹ 47 U.S.C. § 153(29).

⁷² *Local Competition Order* at ¶ 380.

⁷³ *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 99-238, ¶ 167 (1999) (“*UNE Remand Order*”).

⁷⁴ *Id*

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unworkability of excluding line cards and OCDs from the definition of the loop UNE.⁷⁵ As

discussed below, the Commission should redefine the loop UNE to include both line cards and

OCDs employed as part of DLC systems deployed by ILECs.

1. Line Cards

The Commission should include combination line cards within the definition of a loop.

By SBC's own definition the combination unit equipment is "an integrated piece of technology

having both POTS and DSLAM capabilities as well as the 'splitter' functionality."⁷⁶ DLCs,

unlike DSLAMs, are not used solely for the provision of advanced services, but are "deployed

where there are multiple service requirements (*i.e.*, voice and data)."⁷⁷ Thus, the basis for

excluding DSLAMs from the definition of the loop is not present with the combination cards.

They are integrated, multi-functional equipment that play a vital role in the transmission of non-

advanced, as well as advanced, services. The Commission noted in its *UNE Remand Order* that:

[S]ome loops, such as integrated digital loop carrier (IDLC), are equipped with multiplexing devices, without which they cannot be

⁷⁵ *Applications for Consent to Transfer Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transferor, to SBC Communications, Inc., Transferee*, CC Docket No. 98-141, Request for Interpretation, Waiver or Suspension of Merger Conditions Affecting the Ownership of Plugs/Cards and OCDs (Feb. 15, 2000).

⁷⁶ CC Docket No. 98-141, Letter from Paul K. Mancini, SBC Vice President and Assistant General Counsel to Lawrence Strickling, Common Carrier Bureau at p. 4 (February 15, 2000) ("*SBC Letter*").

⁷⁷ *See also* CC Docket 98-141, Comments of Alcatel USA at p. 2 (March 2, 2000) (*Alcatel Comments*) SBC argues that the cards are not advanced services equipment, and notes the majority of the cards will be used to provide POTS service, at least initially. *SBC Letter* at p. 4; *see also*, CC Docket 98-141, Reply Comments of SBC Communications, Inc. In Support of a Determination that SBC Incumbent LECs May Own Combination Plug/Cards and Optical Concentration Devices at p. 7 (March 10, 2000) ("*SBC Reply Comments*").

used to provide service to end users. Because excluding such equipment from the definition of the loop would limit the functionality of the loop, we include the attached electronics (with the exception of DSLAMs) within the loop definition.⁷⁸

Likewise, these integrated cards must be included in the definition of the loop because excluding them would limit the functionality of the loop. The new equipment being produced by vendors today provides integrated functionality such that the line between implementing advanced and implementing non-advanced services is blurred. The Commission should rethink its exclusion of equipment used in the provision of advanced services from the definition of the loop. Such a bright line distinction is no longer tenable given the technology advances that have resulted in integrated equipment. Imprecise application of such a non-existent distinction would improperly exclude from the UNE definition equipment that is crucial to the functionality of the loop.

2. OCDs

OCDs, which are essentially ATM switches, separate each CLEC's ATM packetized bitstream from the common ATM packetized bitstream coming from the remote terminals, and hand off the appropriate packetized bitstream to each CLEC and ILEC advanced services affiliate.⁷⁹ Under SBC's proposed network configuration in Project Pronto, the ATM switches are "the only means by which the ADSL-based traffic of multiple CLECs can be aggregated and

⁷⁸ *UNE Remand Order* at ¶ 175.

⁷⁹ CC Docket 98-141, *Ex Parte* Letter from DSL Access Telecommunications Alliance to Carol Matthey at p. 4 (April 11, 2000) ("*DATA Letter*").

disaggregated.”⁸⁰ Thus, the OCD will be the only feasible point at which CLECs can get access

to the ATM’s bit streams coming from their customers.⁸¹ The OCD as deployed in Project

Pronto is a new bottleneck facility that, absent application of the unbundling obligations of the

Act, SBC can use to control the pace of development of advanced services competition.

Therefore, the Commission should define the loop UNE as including OCDs where such devices

are deployed. This will enable CLECs to access the OCD functionality as part of the loop UNE.

C. CLECS Must Be Permitted to Deploy Their Own Line Cards

The line cards in the Project Pronto system are multi-functional, *i.e.*, they provide DSL functionality, DSLAM functionality, and splitter functionality.⁸² SBC describes the combination

line cards as “an integrated piece of technology having both POTS and DSLAM capabilities as

well as the “splitter” functionality.”⁸³ SBC has threatened to prohibit the collocation of CLEC

DSLAMs within most remote terminals because of alleged lack of space.⁸⁴ As discussed, the

⁸⁰ *Id.* The placement of the OCDs in the central office is an indication of SBC’s failure to consider more economical alternatives, such as allowing CLECs to access the bitstream at the DLC, which would preclude the need for a central-office based ATM switch, including the need for a multiport DLC at the CO, and allow for the deployment of fewer ATM switches. *Id.* The failure to implement a cost-effective architecture will surely lead to higher proposed cost-recovery from SBC for use of this functionality. *Id.*

⁸¹ *Id.*

⁸² *PA ALJ Order* at p. 36.

⁸³ *SBC Letter* at p. 4.

⁸⁴ *In the Matter of SBC Communications, Inc., et al., for Provision of In-Region InterLATA Services in Texas*, CC Docket No. 00-65, Supplemental Comments of AT&T Corp. at p. 24 (April 26, 2000); *Response to SBC’s Requests for Interpretation, Waiver or Suspension of Merger Conditions Affecting the Ownership of Plugs/Cards and OCDs*, CC Docket 98-141, *Ex Parte* Letter from DSL Access Telecommunications Alliance to Carol Matthey at p. 3 (April 11, (con’t.)

Commission should require ILECs to provide additional collocation space at remote terminals.

Therefore, lack of space should not be a sufficient reason for denying collocation at remote terminals.⁸⁵ However, to the extent space is an issue at remote terminals, plug-in line cards provide a solution. The line cards provide an “efficient, convenient and less capital intensive means” for the CLEC to access the subloop.⁸⁶

The problem is that the particular line cards utilized by SBC, and made by Alcatel USA, limit the type of xDSL “flavors” a carrier may provide. For instance, the line cards do not support SDSL service.⁸⁷ For CLECs desiring to provide xDSL services, other than those Alcatel’s equipment supports, Alcatel suggests that these carriers deploy their own DSLAMs.⁸⁸ This is not a viable option for CLECs because the level of concentration present at a particular remote terminal may not justify the cost of collocation.⁸⁹ One solution would be to allow CLECs to provide their own line cards tailored to the particular class of service they seek to offer and to

2000) (“*DATA Letter*”).

⁸⁵ See also CC Docket 98-141, Comments of Alcatel USA at p. 4 (March 2, 2000); *SBC Letter* at p. 2.

⁸⁶ *SBC Letter* at p. 3.

⁸⁷ CC Docket 98-141, Reply Comments of Alcatel USA at p. 2 (March 10, 2000) (“*Alcatel Reply Comments*”).

⁸⁸ *Id.*

⁸⁹ *Petitions of Covad Communications Company and Rhythms Links, Inc. for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company d/b/a Ameritech Illinois, and for an Expedited Arbitration on Certain Core Issues*, Illinois Commerce Commission Docket Nos. 00-0312 and 00-0313, Arbitration Decision at p. 29 (August 17, 2000) (“*Illinois Line Sharing Order*”).

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have SBC install said line cards. SBC objects to this option. SBC argues that it is under no legal obligation to allow CLECs to reconfigure SBC's equipment, and it also argues that this option is technically infeasible.⁹⁰ Thus, SBC's position is that CLECs should be limited in the provision of their xDSL services to the type of service that is supported by the ILEC's line cards. Equally troubling is SBC's position that at any time it may transfer the line cards to its Advanced Service affiliate, and that "the obligations that would travel to the affiliate with such equipment would be evaluated on a case-by-case basis."⁹¹ Unfortunately, the Commission's recent *Project Pronto Order* does not directly provide that CLECs may provision their own line cards.

In order to address these issues, CLECs must be permitted to provision line cards, both at remote terminals and in the central office, that would support the types of services they wish to offer. In this connection, states have already considered and rejected attempts by SBC to provision DSL-based services in ways that will permit CLECs to provide only ADSL services. The Illinois Commerce Commission recently required "Ameritech to install plug-in cards which

⁹⁰ *SBC Reply Comments* at p. 15. Ironically, one of the initial proposals SBC considered making to the Commission was to allow CLECs to own their cards, with SBC installing the cards. *SBC Letter* at p. 3.

⁹¹ *SBC Reply Comments*, p. 8. Also troubling is SBC's apparent view that it can "fund its affiliate such that the affiliate, itself, could construct new remote terminals and install DSLAM equipment without subjecting the affiliate or the incumbent to the conditions proposed by the DSL CLECs or even the unbundling requirements of the Act." *Response to SBC's Requests for Interpretation, Waiver or Suspension of Merger Conditions Affecting the Ownership of Plugs/Cards and OCDs*, CC Docket 98-141, *Ex Parte* Letter from NorthPoint Communications, Covad Communications, and Rhythms NetConnections to Carol Matthey at p. 3 (May 31, 2000) ("*NorthPoint Letter*").

support all DSL-based services requested by the CLECs.”⁹² And, the Texas Public Utility Commission has similarly rejected “ADSL only” competition-thwarting initiatives by SBC in the context of arbitrations with individual CLECs. Accordingly, the Commission should permit CLECs to provision their own line cards so that they may access the full functionality and capability of the loops they purchase.

D. The Commission Should Designate New Fiber UNEs

1. Introduction

Attached to, and as part of these comments, Mpower is providing a white paper that provides an analytical framework for identifying UNEs in next generation network architectures.⁹³ This white paper provides a functional model that can be applied to changing network technology to help determine when specific network elements should be offered on an unundled basis. This model should greatly facilitate identification of new fiber-based UNEs by the Commission in this proceeding and on an ongoing basis. Pursuant to this model, Mpower requests that the Commission designate the new fiber-based UNEs discussed below and in the white paper.

However, the Commission must recognize that identification of new UNEs and their designation as such by the Commission are only the prelude to actual availability. In other words, the Commission must also require that ILECs promptly make these new fiber-based

⁹² *Id.*

⁹³ *Analytical Framework for the Development of New Fiber UNEs and Other UNEs: Establishing a Foundation for the Evolution of UNEs in a Competitive Environment*, Darrell Gentry and Daniel Pinkard, Senior Network Engineers, Mpower Communications Corporation, October 12, 2000.

UNEs available, and, of course, based on forward looking incremental cost. In this connection, Mpower submits that next generation network architecture deployment by ILECs is already an actuality, or imminent. All of the UNEs requested by Mpower are supportable by all the major ILECs, existing or soon-to-be installed network deployments. Accordingly, the Commission should require that ILECs make these UNEs available to CLECs on a reasonable, but very near term, basis.

2. ATM Over Fiber UNE

As explained in the attached white paper, an ATM over Fiber UNE is compatible with ILEC networks without the need for additional ILEC technology. In fact, SBC has already proposed wholesale arrangements for providing ATM permanent virtual circuits ("PVCs") as the access solution for the Feeder 1 Transport portion of resold CLEC DSL loops.

The Commission should require that any ATM PVCs be offered on a Constant Bit Rate ("CBR") basis in which bits are conveyed regularly in time and at a constant rate, *i.e.*, "following a timing source or clock just as members of a marching band follow the beat of the drummer."⁹⁴ CBR technology could be the basis for current high-speed access solutions because it allows carriers to provide a full array of services.⁹⁵ This service is especially important in regard to sending uncompressed voice and video traffic because such traffic is sensitive to variable delay and must be transported without any interruptions in the flow of data.⁹⁶ As data transmission

⁹⁴ Newton's Telecom Dictionary 210 (16th ed. 2000).

⁹⁵ Larry Hurtado, *In the Loop*, Telephony ("*Hurtado Article*").

⁹⁶ Newton's Telecom Dictionary 210 (16th ed. 2000).

becomes more multimedia, *i.e.*, voice over ATM or IP and videoconferencing, quality of service (“QoS”) issues arise.⁹⁷ These media are extremely bandwidth and delay sensitive, and unless packets are capable of being delivered in a real-time, orderly and timely manner, the quality of service is greatly affected.⁹⁸ Electronics that provide for CBR QoS address these problems.⁹⁹

In connection with Project Pronto, CLECs have requested that SBC provide the CBR class of service because it would provide a guaranteed bandwidth without queuing delays or discards.¹⁰⁰ SBC’s initial position was that it could only provide unspecified bit rate (“UBR”) service. UBR service will not permit CLECs to provide the full range of DSL services that they are currently providing and would also preclude future DSL services such as VDSL and G.shDSL.¹⁰¹ SBC eventually agreed to provide such service.¹⁰² CBR service would thus avoid the technical limitations imposed by an ILEC’s choice of a particular technology that could otherwise limit CLECs to a particular service, such as SBC’s initial proposal to limit CLECs to

⁹⁷ *Id.* at 692.

⁹⁸ *Id.*

⁹⁹ *Id.*; Larry Hurtado, *Switching and Transmission*, Telephony (September 13, 1999) (“*Hurtado Article*”). Solutions are already being developed to solve the spectrum compatibility problems associated with CBR service, and, thus, allow carriers to reap the full advantage of such service. Next-generation technologies are being developed that will “employ burst-mode transmissions that allow it to ‘listen’ to line characteristics and manage around potential interfering services, making it compatible with POTS, T-1, ISDN/IDSL DSL, high bit-rate DSL, symmetrical DSL, ADSL, and G.lite services.” *Id.*

¹⁰⁰ CC Docket 98-141, Letter from @Link Networks, Inc., to Carol Matthey, Deputy Director, Common Carrier Bureau, at p. 1 (June 30, 2000) (“*@Link Letter I*”).

¹⁰¹ *Id.* For instance, UBR would not be conducive to providing voice or video over DSL.

¹⁰² *Project Pronto Order* at ¶ 42.

providing ADSL over its NGDLC architecture. Accordingly, the Commission should designate an ATM over Fiber UNE with CBR guarantees.

3. Fiber Wavelength UNEs

New optical technologies, including dense wave division multiplexing ("DWDM") technology, multiplies the capacity of an optical fiber by simultaneously operating at more than one wavelength, thereby allowing multiple information streams to be transmitted simultaneously over the fiber.¹⁰³ DWDM technology permits fiber capacity to be split into separate capacity segments that could be used by different carriers to provide a host of advanced services. According to some observers, deployment of this technology is perhaps the best long-term strategy for promoting capacity in a network.¹⁰⁴ Verizon is using this technology in its large metropolitan areas, and such technology may help promote its fiber-to-the-curb deployments.¹⁰⁵

The effect of DWDM and other technology on the loop could be revolutionary. The technology will allow network carriers "to sell or lease the individual streams of light in fiber-optic networks that transport voice, video, or image traffic."¹⁰⁶ Customers, "such as ISPs, will be able to purchase only the network bandwidth they want, when they want it."¹⁰⁷ It will provide carriers with new revenue streams and allow companies to "boost sales by packaging

¹⁰³ *Collocation Reconsideration Order and NPRM* at ¶ 120, n. 253.

¹⁰⁴ Vincent Ryan, *Life on the Edge*, Telephony, May 15, 2000. ("*Ryan Article*").

¹⁰⁵ *Id.*

¹⁰⁶ *Nortel Article*.

¹⁰⁷ *Id.*

wavelengths with Internet services and lift efficiency by leasing or trading network bandwidth as needed.”¹⁰⁸ As one analyst notes:

[O]ptical wavelengths are the building blocks of the next-generation service provider networks. We anticipate that optical wavelengths will be the unit of commerce for all service provider networks.¹⁰⁹

The Commission should require ILECs to offer optical wavelengths as separate UNEs. The Commission has already taken this approach with line sharing in unbundling the electrical high frequency portion of copper loops. Just as the frequency of a copper loop is part of its “capability,”¹¹⁰ so to is the wavelength of a fiber loop or subloop. Carriers should be allowed either to access unbundled loop functionalities such as wavelength, separate from other loop functions, or to access, at their option, the entire unbundled loop facility.¹¹¹ In this way, a carrier that only desired a particular wavelength could purchase that particular wavelength. If a carrier wanted to access all wavelengths of the loop, it could purchase the entire loop and have exclusive use of the facility. The Commission could utilize a similar approach in regard to the DWDM electronics that it uses in regard to line splitters, *i.e.*, allowing the ILEC to install and maintain

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*, quoting Ron Steele, Chief Technology Officer of NEON Systems, Inc.

¹¹⁰ *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 98-147 and 96-98, Third Report and Order in CC Docket No. 98-147 and Fourth Report and Order in CC Docket No. 96-98, FCC 99-355, at ¶ 17. (“*Line Sharing Order*”).

¹¹¹ *Id.* at ¶ 18.

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the electronics unless such control is inhibiting a CLEC's provisioning of services it seeks to provide.¹¹²

4. Channelized Fiber UNE

The Commission should also establish a UNE based upon the use of TDM (Time Division Multiplexing) technology. As explained in the attached white paper, this technology should be readily available without the need for further technology investment by an ILEC. This technology is already used at Remote Terminal locations to deliver POTS service and T1 service, and to provide the backhaul for any UNEs delivered via an NGDLCU. This technology should be made available on an unbundled basis.

5. The Broadband Fiber Loop UNE

The Commission should establish a fiber loop UNE product that would provide a CLEC use of an integrated loop facility. Mpower proposes that this product offering be an extension of the latest iteration by SBC of its Broadband Service Offering.¹¹³ In that offering, SBC offers access to a:

combined network arrangement consisting of: copper facilities from the NGDLC device deployed in remote terminal sites (includes CEVs, huts, and cabinets) to the end user location; a permanent virtual circuit that consists of ATM data transported over a common OC-3c fiber facility from the NGDLC in the remote terminal terminating on the central fiber distribution frame and delivered to a leased affiliated or unaffiliated telecommunications carrier port on the SBC/Ameritech incumbent

¹¹² *Line Sharing Order* at ¶¶ 76-79.

¹¹³ CC Docket No. 98-141, Letter from Priscilla Hill-Ardoin, Senior Vice President SBC Telecommunications, Inc. to Magalie R. Salas, Secretary of the FCC, SBC Voluntary Commitments at page 2 (August 2, 2000) ("*SBC Commitments Letter*").

LEC's OCD in the serving wire center; and a port on the SBC incumbent LEC's OCD with associated cross-connects to extend the port to a point of affiliated or unaffiliated telecommunication carrier virtual or physical collocation.¹¹⁴

This product offering should be deemed to be an unbundled network element offered in accord with Sections 251 and 252 of the Act at forward-looking costs.¹¹⁵ This product offering should be updated and extended in light of the issues raised above in regard to particular components of the NGDLC architecture and new technologies. In addition, the product offering should be allowed to evolve and adapt to reflect different NGDLC architectures and new product developments. The product offering should provide for deployment of equipment that gives a CLEC full access to the existing features and functionality of the facility as well as future features and functionality.

6. NGDLC Aggregation UNE

In addition to other UNEs described above, the NGDLC itself must be unbundled so that the aggregating functionality of NGDLC is available as an element separate from whatever line card happens to be installed to serve a customer. As explained in that attached white paper, this will be necessary in order to permit the CLEC to provide their own line cards.

¹¹⁴ *Id.*

¹¹⁵ As this Commission has noted, it is not enough to implement pro-competitive solutions such as line sharing without more; such solutions will not promote competition unless they are "priced in a way that permits competitive LECs to enjoy the same economies of scale and scope as the incumbent LECs." *Line Sharing Order*, p. 63. The same would hold for the fiber UNE, *i.e.*, unless the pricing for the UNE reflects the economies of scale and scope the ILECs derive from their new-generation architecture, competition will not take root.

E. ILECs Should be Required to Disclose Fiber Deployment Plans and the Full Technical Capabilities of Next Generation Network Architectures

As discussed, the Commission has already determined that ILECs must offer as part of UNEs the full functions and capabilities of network elements. Mpower has requested in these comments that the Commission specify that certain capabilities are part of the fiber loop UNE and that they be separately designated as UNEs. Even if this approval is adopted, however, CLECs would still be disadvantaged in their ability to request advanced capabilities of next generation network architectures because ILECs and their vendors have not fully disclosed the capabilities of the equipment they plan to deploy. The Commission's requirement in the *Project Pronto Order* for SBC to post on its website technical information from its vendor is not likely to be adequate.¹¹⁶ Mpower has carefully reviewed information posted by Alcatel on its website, and this provides little information about the capabilities of the equipment other than what is useful for marketing purposes. Moreover, current network disclosure rules are inadequate for revealing the capabilities inherent in advanced network equipment because those rules only require ILECs to disclose network changes that could affect interoperability.¹¹⁷ While that disclosure is essential, it only reveals those equipment capabilities that the ILEC has chosen to activate.

Instead, the Commission should require that ILECs fully disclose the capabilities of all deployed equipment, including unactivated capabilities. To the extent vendor proprietary information is involved, the Commission may require that ILECs disclose this information subject to appropriate nondisclosure agreements.

¹¹⁶ *Project Pronto Order*, at ¶ 44.

The need for timely and full disclosure is vividly demonstrated by Mpower's experience in Richardson, Texas.¹¹⁸ There, SBC removed most of the copper loops serving that community as part of its deployment of a next generation fiber-based network. It provided no notice to CLECs of the removal of copper or deployment of the new network architecture. Moreover, it continued to accept and process orders and payment for collocation and permitted CLECs to go forward with space buildout, all without informing CLECs of the dramatic changes SBC was making to the network in Richardson. Then, Mpower discovered that its collocation space was essentially useless for provision of DSL, and its investment wasted, because SBC had previously removed all the copper loops. Mpower submits that nothing could more strongly demonstrate the need for timely and complete network disclosure than this experience in Richardson, Texas.

F. The Commission Should Establish a Streamlined Process for Designation of New UNEs

Over the last year the Commission has conducted an extensive rulemaking proceeding to designate new UNEs.¹¹⁹ The present proceeding is also examining designation of new UNEs. While rulemaking is a useful, and in some cases, necessary, tool for designation of new UNEs, the Commission could significantly facilitate achievement of the goals of the Act, and reduce administrative burdens on the Commission, by establishing a streamlined process - a "Rocket Docket" - for designation of new UNEs. The Commission could provide that CLECs may

¹¹⁷ See 47 C.F.R. § 68.110(b); 47 C.F.R. Sec. 64.702(d) (2); 47 C.F.R. §§ 51.325 -51.335.

¹¹⁸ See *Mpower Richardson Texas Letter*, *supra* note 72.

¹¹⁹ *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 99-238, ¶ 167 (1999) ("UNE Remand Order").

make a request to an ILEC that a particular network element or function be available as a UNE and that unless the ILEC declines to do so within 30 days, the ILEC must make that network element available as a UNE. If the ILEC objects within 30 days, then the CLEC may invoke an expedited administrative process at the Commission for determination of whether the requested element should be available as a UNE. The Commission should delegate authority to the Bureau level for administration of this program. This is not the only possible streamlined process for designation of new UNEs but it could provide a basis for a more rapid availability of network elements on an unbundled basis as new technologies are deployed by ILECs.

As noted, Mpower is providing with, and as part of, these comments a white paper that will facilitate the identification of new fiber-based UNEs. This will also aid the Commission in identification of new UNEs in the context of any expedited process for identification of new UNEs.

VI. COPPER LOOPS MUST BE MAINTAINED

The Commission seeks comment on the impact the deployment of NGDLC will have on copper facilities, *i.e.*, what will happen to these copper facilities when the NGDLC is deployed as an overlay of existing copper facilities. The Commission needs to ensure that these copper facilities are maintained in such a manner that they provide a viable alternate source of CLEC access to customers. The importance of these facilities has by no means been lessened by the NGDLC architecture, and in some cases, their importance has been heightened, particularly to those CLECs whose business plans are focused on the use of copper facilities.

One of the main reasons this Commission unbundled the subloop element was to facilitate CLEC access to customers in an integrated digital loop carrier ("IDLC") environment.¹²⁰ While, as shown above, technology has provided more ways for CLECs to access IDLC customers,¹²¹ ILEC deployment of the NGDLC architecture, and the restrictions the ILECs have imposed, ensure that CLECs will still have difficulties accessing their customers under the NGDLC architecture. Maintaining existing copper facilities in the subloop will give CLECs more options in providing such access.

As discussed above, the lack of collocation space for CLEC DSLAMs in many NGDLC remote terminals coupled with interoperability issues with line cards could effectively preclude a CLEC's ability even to access its customers, much less to provide the services it seeks to offer to its customers. The ILECs and their vendors have trumpeted the continued availability of copper facilities as a solution.¹²² For copper to remain a viable alternative to the CLECs, the spare copper facilities need to be maintained.¹²³

¹²⁰ *UNE Remand Order* at ¶ 213. At that time CLEC access to the IDLC loop at the central office was not technically feasible, so the CLEC needed to access the loop at the remote terminal. *Id.* at ¶ 217.

¹²¹ *See, e.g., Alcatel Reply Comments* at p. 5.

¹²² *SBC Reply Comments* at p. 14; *Alcatel Reply Comments* at p. 5.

¹²³ This by no means is intended to detract from the need to unbundle the NGDLC feeder facility. Instead, it is meant to provide the same variety of options that the ILEC and its affiliate will have. For instance, in those areas where there are spare copper facilities, the ILEC and its affiliate can choose between copper and fiber depending on which facility will best support their particular product offering, and which medium would be most cost-effective. The CLECs should have this same flexibility.

The concerns of the CLECs over their ability to access customers in the NGDLC

environment have been well-documented in Docket 98-141 and other dockets. These are not idle concerns as noted above. In Richardson, Texas, SBC deployed fiber-to-the-curb technology that effectively precluded CLEC provision of advanced telecommunication services including xDSL services.¹²⁴ SBC coupled its fiber-to-the-curb deployment with elimination of most of the copper infrastructure in that network segment. CLECs collocated at the Richardson, Texas, central office were left with “little if any access to copper loop UNEs for the provision of xDSL service.”¹²⁵ This precipitous removal of copper facilities rendered the expensive collocation arrangements CLECs made in Richardson, Texas, useless, and precluded CLECs’ ability to provide advanced services.¹²⁶ This example illustrates in a nutshell how allowing ILECs unilateral, unfettered control over facility deployment has already led to the stunting of competition.

In addition to addressing the CLEC access issues, the continued use of copper facilities will be beneficial from a network perspective basis as well. Copper remains the most economical medium for the distribution portion of the loop, particularly given the high cost of fiber-to-the-curb technology.¹²⁷ Also, many of the technological advances described in regard to fiber technology are occurring with copper as well. ILECs recognize the huge investment they

¹²⁴ *Mpower Richardson Texas Letter* at p. 2-4.

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ *Ryan Article.*

have made in the copper infrastructure and are looking to develop their fiber networks while at the same time getting more out of copper pairs.¹²⁸ Thus, for the near future, at least, copper and fiber will co-exist in ILEC networks.

This explains why, despite ILEC exhortations on the need to protect their control over the network, there is a surprising underlying consensus on the need to preserve copper facilities. As one observer notes:

[S]imilarly, despite reservations in filings before the Commission in other contexts, SBC notes that maintaining copper loops is essential to preserve competitive options, especially in light of flourishing technological advances in delivering copper-based DSL services on home-run copper (“These all-copper loops may become even more useful for provisioning DSL-based services because new forms of DSL with longer reach on all copper loops may evolve.” ¶ 31)¹²⁹

This consensus is reflected in the “voluntary commitment” made by SBC in regard to spare copper facilities. SBC has stated that (1) it has no current plans, or plans under consideration to retire “mainframe terminated” copper facilities with NGDLC deployment;¹³⁰ (2) it will follow its established copper retirement policy in a non-discriminatory manner; (3) if it does retire copper facilities pursuant to its NGDLC deployment, it will give six months’ notice of such retirement via Internet posting and offer to sell such facilities to unaffiliated parties; and (4) the application

¹²⁸ *Ryan Article*. For instance, many ILECs plan to use ADSL technology to deploy multiple lines of voice on a single copper pair. *Id.*

¹²⁹ *NorthPoint Letter* at p. 4 (emphasis in original).

¹³⁰ As AT&T notes, “mainframe terminated” copper facilities needs to be clearly defined. CC Docket No. 98-141, Letter from James L. Casserly, Counsel for AT&T Corporation, to Magalie R. Salas, Secretary of the FCC, at p. 4 (August 23, 2000)(“*AT&T Letter*”).

of its copper retirement policy during the next three years will result in the retirement of no more than 5% of its total mainframe copper facilities in service as of September 1, 2000.¹³¹

The requirement of the Project Pronto Order that prohibits SBC from retiring copper for three years is seriously inadequate.¹³² The Commission must recognize that the development of fully competitive markets does not happen overnight, and that development of facilities-based competition requires a medium for the transmission of communications, in this case the medium of copper. Also, the development of competition is based on attraction of investment capital, which will not happen if the period of availability of the medium is too short and the risk too high. SBC's proposal of three years is simply too short for this purpose. The Commission has already found that a time horizon of at least ten years is necessary to promote facilities-based competition.¹³³

Accordingly, ILECs should be required to maintain copper facilities for at least ten years. CLECs need that time horizon "in order to adequately, finance, and implement business plans."¹³⁴ In this connection, it is worth noting that ILECs in their own TELRIC studies for UNE loop prices have assumed an economic life for copper loops of more than 15 years.

¹³¹ *Project Pronto Order* at ¶¶ 38-40; CC Docket No. 98-141, Letter from Priscilla Hill-Ardoin, Senior Vice President SBC Telecommunications, Inc. to Magalie R. Salas, Secretary of the FCC, SBC Voluntary Commitment Number 7 (August 2, 2000) ("*SBC Commitments Letter*").

¹³² *Project Pronto Order* at ¶ 39.

¹³³ See e.g. *Amendment of Section 2.106 of the Commission's Rules for Use by the Mobile-Satellite Service*, ET Docket No. 95-18, FCC 00-233, released July 3, 2000.

¹³⁴ *Mpower Richardson Texas Letter* at p. 4.

Traditional ratebase rate-of-return analyses have generally assumed a useful life to 25-30 years for copper loops. Therefore, there is little prospect that requiring ILECs to maintain copper loops for ten years is unrealistic.

In addition, an ILEC should be precluded from focusing its retirement efforts on particular central office(s) in such a way as to effectively retire the copper loops in an entire area. Otherwise the ILEC could target its retirement plans to areas in which competition is thriving, thereby thwarting such competition, and promoting the interests of the ILEC's advanced services affiliate.

VI. THE COMMISSION SHOULD IMPLEMENT A NATIONAL SPACE RESERVATION POLICY FOR BOTH CENTRAL OFFICE AND REMOTE TERMINAL COLLOCATION

A. The Need for a National Standard

The Commission clearly recognizes the value and importance of policies regarding the reservation of space in ILEC premises.¹³⁵ The Commission has recognized that ILECs have both "the incentive and capability to impede competition by reducing the amount of space available for collocation of competitors."¹³⁶ Unchecked ILEC space reservation will limit the amount of available collocation space and inhibit the timely deployment of competitive services,

¹³⁵ This section will focus on ILEC space reservation. While CLECs also reserve space, the abuse of space reservation and the anti-competitive effects is more an issue in regard to ILEC space reservation since they exert control over the premises. Any policy that this Commission formulates that allows for ILECs to reserve space should provide the same opportunities to the CLECs to reserve space.

¹³⁶ *Collocation Reconsideration Order and NPRM* at ¶ 50, quoting *Advanced Services Report and Order*, 14 FCC Rcd at 4793, ¶ 56.

particularly advanced services.¹³⁷ Without policies limiting the time frame for reserving space, there is no check on how long ILECs may keep vital collocation space out of the reach of competitors. Pacific Bell, prior to the implementation of a space reservation policy by the California Public Utilities Commission, had an “unlimited” reservation policy for dissimilar equipment, *i.e.*, switching equipment, Main Distribution Frames, and power.¹³⁸ SBC has previously argued that space reservation periods of 10 to 20 years would be appropriate for such equipment.¹³⁹ Thus, without space reservation policies, chunks of valuable potential collocation space could be cordoned off from competitors for years regardless of the true need to reserve such space.¹⁴⁰

Recognizing this, the Commission “strongly” urged state commissions to adopt space reservation policies. The issue of space reservation cries out for a national standard, however. It is laudable that state commissions in California, Texas, and Washington have implemented such policies. These policies will help ensure that competitors have space to collocate their equipment

¹³⁷ *Collocation Reconsideration Order and NPRM* at ¶ 50.

¹³⁸ *Rulemaking on the Commission’s Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Networks*, Decision 98-12-069, 1998 WL 995609, 69 (Ca. PUC 1998). Dissimilar equipment is equipment that will be deployed by the ILEC in the ILEC premises that will not be deployed by the CLEC. Similar equipment is equipment that both the ILEC and CLEC will likely deploy in an ILEC premises, *e.g.*, multiplexers.

¹³⁹ *Collocation Reconsideration Order and NPRM* at ¶ 49, n. 131.

¹⁴⁰ Most ILECs do not need to reserve much space for future use because they already have space that could be made available by decommissioning obsolete equipment and utilizing smaller more efficient equipment. *See e.g.*, *Re MFS Communications Company, Inc.*, Docket Nos. UT-960323, UT-960326, UT-960337, 1998 WL 996190, 10 (WUTC 1998).